November 1992

approach

The Naval Aviation Safety Review

When you start wearing gold or silver oak leaves on your collar, you're supposed to be smarter than the average aviator. You're supposed to be a shining example to wide-eyed nuggets. You're supposed to be a teacher. You're not supposed to fly into the side of a mountain with your awe-struck nugget quietly thinking, "He's senior. He knows what he's doing."

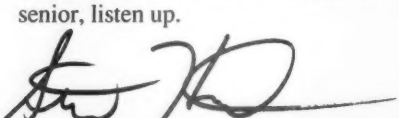
Yet that scenario, in both the fatal and non-fatal versions, is repeated many times in mishap reports, *Approach* stories and O Club tales. Every JO has a story about the guy with more stripes who intimidated him through terror or just being obnoxious.

If we've all faced a little Hitler and hated flying with him, where do all these senior bozos come from? Do we forget what flying with these guys was like or do we feel that flying with a no-neck-Neanderthal is part of a JO's education?

Unless the promotion procedure has changed, every senior sit-down-shut-up-I'm-in-charge guy was once a gee-sir-I-thought-we were-cleared-for-takeoff guy. What is it about a career that causes this change?

Who should ensure crew coordination? It's easiest for the senior officer, but that's not the whole answer. Aviators have a high level of aggressiveness, but they also have fragile egos. Many are reluctant to question superiors for fear of looking stupid. The desire to play the part of the invincible warrior is at odds with the perceived weakness of asking a question. Sometimes senior aviators treat legitimate questions as insults — as if the JO is implying that the senior doesn't know what he's doing.

When you fly, you're a team. That means as a crew or as a wingman you're responsible for both sides of the communication equation. If you're junior, speak up; if you're senior, listen up.



Steve Halsted

approach

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On the cover: "At the Break" by Stan Stokes. Courtesy of Eagle Art Galleries, Box 3935, Palm Desert, CA 92261

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By Lt. Robert Schultz

A Rough Way to End a

PH1 David Kruse

The perfect chance to get some great training on a weekend cross-country. Everybody knows that there's nothing like being on the road in your war machine with a great buddy at a fun location. The kickoff was a section low-level into Pensacola, to be followed the next day by an air nav hop into Glenview for the weekend. All went as planned, including the preflight preparation for the return leg to Cecil.

The final hop began with an uneventful 10-second running rendezvous and remained remarkably ordinary until we leveled off at 37,000 feet. It was then that the first master caution and HYD-1A lights appeared.

> Being utterly perplexed and in a mild state of denial, I searched the cockpit instruments for the answer.

The first sign of HYD-1A failure (one-half of the No. 1 engine's hydraulic system). The F/A-18 incorporates a reservoir-level sensing (RLS) system that alternatively shuts off the A or B branch of either of two hydraulic circuits to isolate a leak. However, thanks to the Hornet's multiple hydraulic circuits, we simply had to decide which prebriefed divert to go to.

As quickly as the caution had appeared, it disappeared, and the HYD-1B caution reared its ugly head. But wait a minute. In a Hornet this should be no big deal. At the very worst we're looking at a single-engine, half-flap landing on a 9,000-foot runway, just 50 miles away. Seconds later, as I suspected, the HYD-1A caution reappeared, confirming a total HYD-1 system failure.

After conferring with my wingman, I secured the No.1 engine in accordance with NATOPS to reduce the fire hazard. Piece of cake. The Hornet was going to bring me safely back to earth, just as it had always done before. Besides, this was only a cross-country. I remember thinking how fortunate it was that the HYD-1 system

Great Weekend

had failed instead of the HYD-2 system, since the landing gear runs off of HYD-2. Then out of the corner of my left eye I saw another master caution light and a HYD-2A caution light. Then they disappeared.

"Please stay away," I thought. It did momentarily, but much to my disappointment, the HYD-2B caution couldn't avoid getting into the act and now presented itself for analysis.

Being utterly perplexed and in a mild state of denial, I searched the cockpit instruments for the answer. Very quickly matters became worse—much worse. Seconds later, the HYD 2A caution came back on the screen and forever changed my life.

Now devoid of any operating hydraulic flight controls and with no built-in mechanical backup, the aircraft rolled inverted and began to assume a 50-60-degree nose low attitude. As a last-ditch effort to regain control, I attempted to reset the flight control computers. Why not? I was at 37,000 feet a second ago?

As fate would have it, my attempt to reset the flight control computers was futile and the only result was that my aircraft had picked up an extra 200 knots on top of the 200 knots that I had started with. In my attempt to save an aircraft that was doomed, I put myself into a treacherous, inverted, negative-G ejection situation. Oh, brother, do I ever wish I had taken an extra 10 seconds to really cinch down those lap belts during strap-in. Exposure above 26,000 feet to a 400- knot airstream at minus 44 degrees celsius was dead last on my list of things to do that day.

...the only result was that my aircraft had picked up an extra 200 knots on top of the 200 knots that I had started with.

As I pulled the ejection handle, a halo of gray smoke covered the canopy followed shortly by the whoosh of wind over my ragtop Hornet. The next sensation was a blinding acceleration as the seat traveled up the rail—toward the earth. After enduring the effects of what felt like a successful Michigan goal-line stand, the world was upright again and I was still alive with four miles to go until reaching terra firma.

I noticed my left glove was missing and the cold air instantly began to numb my hand. Something else was wrong. The seat wasn't going to separate for some 14,000 feet, so I had time to look around and assess the situation. It was then I noticed that as I was facing Denver, my left leg was bent at the knee in a 90-degree angle, with the bottom of my foot pointing towards Houston. I hoped that it was just a sprain, but I soon realized that it was something more serious—like maybe a badly dislocated knee.

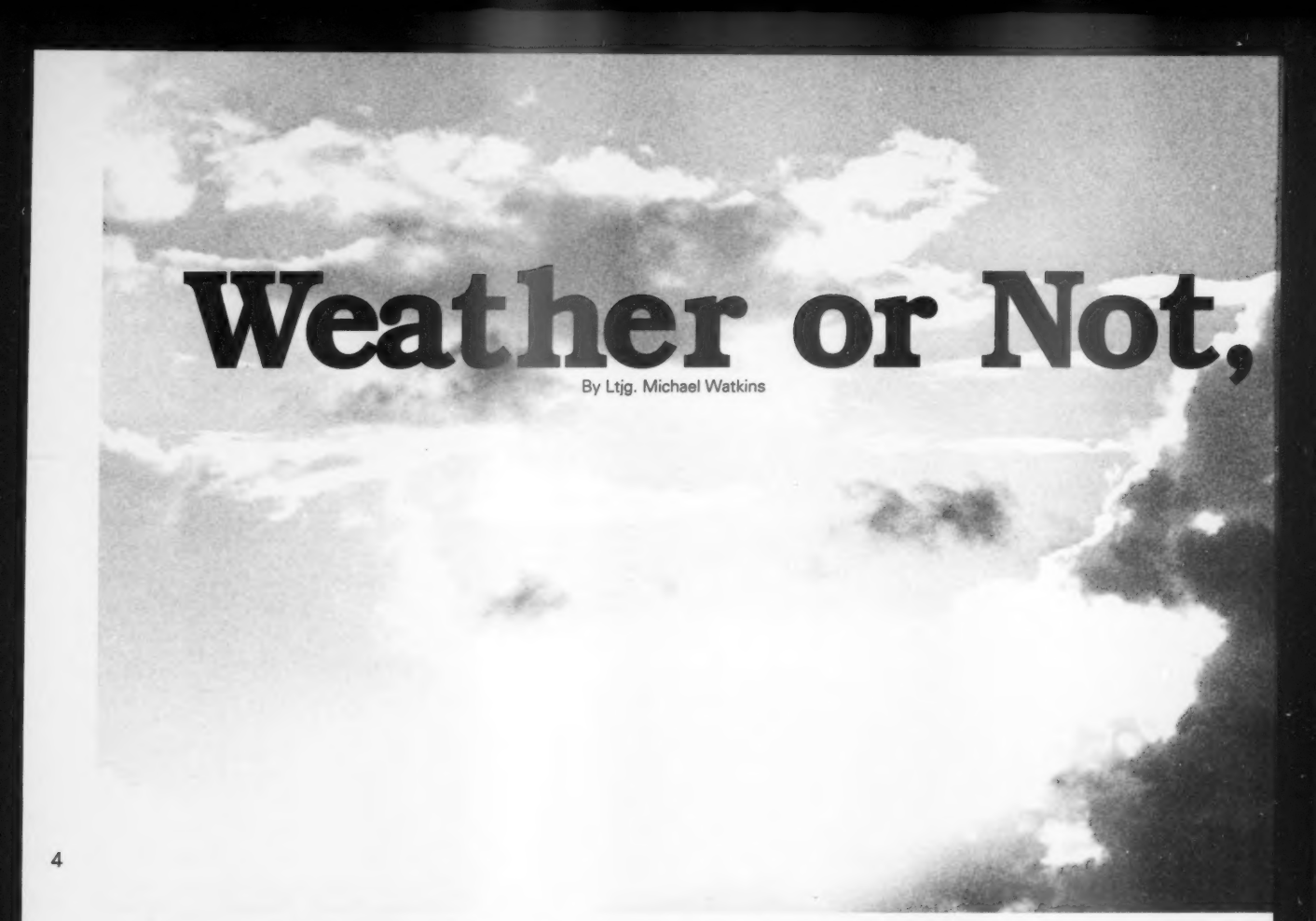
To avoid further injury I reached down and grabbed my left ankle and pulled inward until my leg resembled the normally straight appendage I had grown to know and love. It remained in a straight position and I remember thinking, "Now there's bonus." Next, I began to try to manually get away from the seat by using the D-ring. However, after failing to locate it, it occurred to me that the reason I was unable to find this important piece of survival gear was because I had just ejected from an F/A-18, which unlike the A-4, does not have a D-ring. I had reverted to ejection training specific to the aircraft in which I had accumulated more than 1,800 hours and the vast majority of my Navy flight experience.

Much to my relief, my parachute opened. Then I saw the comforting sight of my wingman, faithfully circling me as I continued to descend toward the cornfields below. I turned my attention toward the eventual landing that I would have to make with a non-functioning left knee. As the ground came up, I put my legs together and pulled up on the risers in an attempt to soften the shock of ground impact. When my feet touched the ground, I leaned forward to allow my face to break the fall. It worked!

Now I was laying in a snowy cornfield with a frost-bitten left hand, a blown-out left knee. Next, I need to figure out how to turn off the ELT to talk to my wingman. The job proved to be difficult because my right hand was almost as dysfunctional as the frost-bitten left one. I shudder to think of the outcome if I had ejected over water and had to manually release my koch fittings. My wingman coordinated the rescue effort flawlessly.

Three minutes and 45 seconds after the first master caution, my life had been in the hands of Martin-Baker. Was I prepared for a cold-weather survival scenario? No. This was only a cross-country. I was extremely lucky for the quick response by a farmer and his family. The next six weeks of hospital time permitted many hours to reflect and review my ejection. ◄

Lt. Schultz was flying with VFA-132 at the time of his ejection. He is currently assigned to the Strike-Fighter Weapons School at NAS Cecil Field while he undergoes physical therapy before returning to the cockpit.



Weather or Not,

By Ltjg. Michael Watkins

The flight should have been a "good deal flight", a two-point-five to get night and instrument time prior to deployment. The plan was to fly to a local Air Force base, shoot a couple of approaches and RTB. We briefed, went to weather, then filed at base ops. Just to make things more interesting, it would be solid IMC for the entire flight (unusual for southern California).

The weather at home plate was passable: 900 OVC, 5 miles in light rain and fog, wind 25 with gusts to 35. For our return the forecast was expected to be 800 obscured with 2 miles visibility in rain and fog. We had no ILS and they had no PAR.

Our local alternate was below PAR mins, so we chose another alternate 75 miles away in the desert. Seventy-five miles was a long helo hop but we had the gas plus a one-hour reserve. My copilot and I agreed that this was good training, since choosing an alternate is something we rarely have to do in SOCAL.

We preflighted, climbed into our SH-60B, did our pretaxi checks and called clearance delivery. Surprisingly, they had our clearance—the entire route to the AFB—in less than 30 seconds. The good deal was getting better. Takeoff and departure were normal and we were on our way.

At 6,000 feet, it was a little bumpier than we had expected and a lot colder (+6 deg C). It was raining but there was no icing. We all kept a good lookout for ice anyway, as our blade de-ice system was down. At the first sign of ice, we would descend and RTB. Nearing our destination we received clearance to hold for 15 minutes, yet another rarity in SOCAL.

Fifteen minutes soon became 30. Finally cleared for the approach, we decided that this flight was losing it's good deal status.

On final we switched to tower, who asked us for our PPR number. I explained that we didn't need one as we were only shooting approaches. Tower then asked us what approach control had given us for climbout instructions. Explaining that we didn't have any, we heard the standard, "Stand by". By now we had broken out at 800 feet and had the runway in sight.

On short final tower told us that this would be a full stop as departure had no room for us. We asked to stay in the pattern until our clearance was ready, and tower matter-of-factly told us that the VFR helicopter pattern was 1,000 feet AGL. Furthermore, the delay with departure would be up to an hour. Rather than sit on deck, we

Always Have a Plan

PH1 Michael D.P. Flynn

decided to do what any self-respecting helo pilot would do and departed special VFR. After all it was 800 and 6, only 200 feet from VFR.

Turning west toward the ocean and squawking VFR, I slowed to max-conserve airspeed to save gas and allow my copilot time to get the sectional out to plan the best route home. Terrain features on sectionals are difficult to locate at night so we tried to navigate using highways and TACANs. We planned to head for the beach and turn south for home. Using radar, the SENSO called the shortest direction to the beach 240/15. Looking at my tactical display, the familiar north-south land-line, with black to the west, looked like beach to me. So we flew west while I scanned the area for airports, landmarks and other people doing the same thing.

We located a military field by the familiar green-and-split-white beacon, but we could not get a lock-on with either the TACAN or ADF. Since we didn't know what field it was, we avoided it by five miles. The highway pattern looked familiar so we assumed it was a local NAS.

"Let's pick up the highway to the south because it leads straight home," I said. Well, the highway turned east and the one we thought we were following didn't. It was 15 minutes later and we were no closer to home.

Going back to our last known position, we again headed west with vectors from the SENSO. As we approached what looked like ocean on the radar, it turned out to be a coastal mountain range with tops well into the clouds.

At this point we all agreed this was dumb.

"Let's tuck our tails between our legs, go back to the AFB and get an IFR clearance back home," I suggested.

We had enough fuel for the flight home, flight to alternate, and 40 minutes reserve. Flight service informed us that weather at home field was still as expected. We filed and received our clearance within two minutes. The rest of the flight was uneventful other than the runway lights being off at the bottom of the GCA at home field. We had the field in sight and tower quickly corrected this oversight.

Twenty-twenty hindsight has left me with a few lessons. Brief alternate plans of attack. You can't plan for everything, but the more you plan, the less you'll be surprised.

Most importantly, work as a crew. We did and we returned our flying machine in one piece. ◀

Ltjg. Watkins flies with HSL-49's Det 2.

We Almost Went

Michael J. Fielder

BOOM!

By Lt. John Berry

Flying from Hurghada, Egypt, to the carriers in the Red Sea participating in Desert Shield and Desert Storm had become routine. We were scheduled for a typical CH-53E VOD mission. The weather was CAVU, the load was the regular conglomeration of mail, pax, and assorted cargo with maybe an odd engine or two thrown in. Everything was about the same as it had been for the last two months.

The brief, preflight and loading of cargo had gone off without a catch. We launched on time and it looked like we were going to hit our overhead right on time. I was a happy man. As we neared the CV and passed our load report to marshal, it sounded as though we'd be cleared straight in for landing, no Starboard Delta. (In case you fixed-wing guys don't realize it, Starboard D isn't the most exciting thing in the world.) I was even happier.

As we switched to tower, the Boss cleared us into spot 3. I think I actually smiled. (Everyone knows what introverted, morose individuals helicopter pilots are.) My copilot set up for her approach, and everything was looking good. Lineup, altitude, airspeed were right on ... Uh, closure was a little fast, so I said, "Watch your closure rate."

The nose attitude increased but our closure rate didn't.

Nose attitude looked good for the correct deceleration, but we weren't slowing, so I said, "You're still fast." I also heard the crewman call, "Slow your forward." The nose attitude increased but our closure rate didn't.

As I lost sight of the deck, I called for a waveoff, followed shortly by a similar call from the crew chief. The copilot initiated the waveoff, the collective came way up, as did the torques, the airspeed bled to zero and mysteriously the aircraft started yawing right. There we were, corkscrewing to the right, straight up. Suddenly, I wasn't happy.

As the nose passed 90 degrees, I heard the Boss say something and my copilot make a reply. (People always want to talk when your hands are the fullest.) I took the controls, lowered the collective and nose, and continued the right turn to our original heading. As we rolled out and leveled off, I realized what had happened. I asked, "Boss, say your winds." His response confirmed my suspicions: we had tried to land with a tail wind.

Why did this happen? I assumed the winds were on the bow—after all, the ship was underway. I didn't ask for the winds, nor did the tower give any. When we were on approach with the normal decel attitude and we weren't slowing, we should have known something was amiss. We had been lulled by the same routine, day in day out. When the waveoff call was made, my copilot overreacted and pulled in too much power.

There is a misconception among some pilots that a waveoff call demands drastic actions. A waveoff is just that: stop your approach and take it around. It's not an emergency...yet.

We hadn't specifically briefed waveoff procedures, except to say that anyone could call it and it was mandatory. I assumed that the waveoff would be a nice controlled go-around. Perhaps I waited too long before calling for the waveoff, letting my copilot get in too deep. But when my copilot pulled an armpit full of collective with our nose attitude high, we stopped immediately and our power required approached our power available.

Before our flight we had figured the power required and available for the day. We had ample power to spare, but with the large increase in torque, the margin became much closer. When the power required nears the power available, the CH-53E loses tail-rotor authority while only drooping maybe 12 percent Nr, hence the right corkscrew.

Now, whenever I'm CQing pilots I always check winds and throw in a waveoff, to see how they react. Since then, you can be sure I watch closely how much power is applied, and where the winds are. ◀

Lt. Berry flies CH-53Es with HC-1. At the time of this story he was assigned to HC-4.

Peter Mersky

JOs on Parade

By Lt. John M. Hodges

Fueled up to FCLP weight, point checks done, off to the races to show the LSOs how a squared-away junior guy does it.

"Where are you going?" queried the ground controller.

"Uh ... runway two-five" responded my salty one-and-a-half cruise BN. However, our A-6 Intruder was pointed the wrong way on a one-way angled taxiway used to exit – you guessed it – runway two-five.

"O.K., sir," ground came back, "Continue back-taxi runway two-five, position and hold." More than a little embarrassed about my apparent inability to taxi in the dark, we continued on a hop with enough warning flags for a parade, flags we didn't see until it was too late and probably wouldn't have heeded, anyway.

As a first-tour pilot fresh out of the west coast A-6 FRS, I had joined an aggressive fleet squadron less than a month away from a six-month Westpac cruise. We (admittedly without my help) had won the last four line periods for landing grades, and I was determined to be a hacker and show my new command I was ready to answer that unspoken challenge to keep the greenie board free from those ugly yellow and brown stains. Toward that end, I had taken a late-night contingency bounce period on short notice, flying with a long-time friend for the first time. Flag No.1.

As a hot-fuel/hot-crew switch, our familiar cold-start routine would be replaced by the often

rushed process of jumping into a turning jet. The crew called in on downwind for their final pass, catching us barely a third through our flight brief. Not to worry. We were ready. A quick scan through the emergency portion of the NATOPS brief, dress in a hurry, read the book. Ops is gonna love us for getting this extra "X" out. Flag No.2.

OK, into the jet, hooked up, unstrapped for refueling.

"501, paddles."

"Go ahead"

"Yeah, you're the last one out here. You'll be cleared into the short pattern for six passes. Let's make them look good."

Of course they'll look good! Jeez, get off my back. It was obvious that our LSO had other places he'd rather be. No problem, we'd be out there in no time. Let's see, what would be the shortest way to two-five? Can't keep him waiting. This taxiway looks good. Then came that embarrassing call from ground.

"Yeah, you're the last one out here. You'll be cleared into the short pattern for six passes. Let's make them look good."

My first thought was, "Hope the LSO isn't listening to ground … that's not likely to impress him a lot." Flags No. 3 and 4.

Somehow we made it to the approach end of the runway, made a U-turn, and ran the engines up. Gauges good, runway's clear, off the brakes. Eighty knots, off nosewheel steering.

"Hey," my BN asked, "did we get clearance to take off?" Not good. Big, big flag. The answer was no. There we were, a hundred knots on a dark runway, about to go flying without clearance.

"Okay, let's abort", I said.

"501 aborting," called my BN.

At this point, good NATOPS training took over and got us safely stopped near that same angled taxiway we had used earlier. Safe, except that in my eagerness to haul the aircraft to a halt, I had fused the brakes, and the tower reported fires underneath the jet. The heat had caused the seals in the brake calipers to fail, pouring hydraulic fluid on the glowing disks. Some first-rate work by the airfield fire-fighting crew quickly extinguished the fires. As we sat on the runway in our now-paralyzed Intruder, we discussed how we planned to save our pride. Should we tell the truth, explaining that we had just traded a serious ATC violation for a potentially life-threatening emergency? I can tell you we didn't. The last flag in an amazing series.

At the next AOM, my BN was lauded for recognizing a vibration in the starboard mainmount in time to abort and avoid a serious landing emergency. I was not praised for my braking technique (the angle turns off of two-five more than 1,500 feet from the overrun), and the LSO had a little advice for me on getting clearance before takeoff.

The lessons we learned that night are not new. If you feel rushed, you are very likely to forget something. In an unfamiliar situation, the hairs standing up on the back of your neck are trying to tell you something. It is an extremely bad idea to trade an embarrassing situation in for one that can definitely kill you.

Whether your command fosters it or not (and ours did and still does), step forward and air that Delta Sierra out. We learned enough from our little parade to keep us from ever knowingly making the same mistakes again. ◄

Lt. Hodges is a pilot with VA-52.

Check Your Egos

By Capt. Jeff Perkins, USA

What began simply enough as a routine out-of-sector deployment flight developed into a scenario not unlike others I have read in *Approach*. Our flight detachment was deployed to eastern Turkey as part of a NATO exercise involving 10 countries. We would transport the headquarters staff throughout the exercise as part of a force helicopter unit.

A typical mission included an early rise, breakfast (read MRE), preflight, mission support, return and recovery. Briefings meant a thorough map reconnaissance since the primary navigation instrument was the HHM (Hand-Held Map). A little "here's what we're going to do" dialogue generally followed. This particular mission, however, was different in that I was to fly with the commander of our flight detachment.

The major (a former instructor pilot) had several thousand hours as a helicopter pilot and this would be our first flight together. Usually, I flew with a senior warrant officer since I was what the Navy calls a nugget with only 200 hours in the UH-1H. What was not apparent at first, however, was that the "shut up and pay attention; you don't know anything" attitude of the commander and my fear of him followed us into the cockpit of the aircraft.

Our mission was to pick up four Turkish liaison officers and take them to a remote site in the mountains of eastern Turkey. We preflighted and the commander's usual karma was as evident as the upset stomach I was feeling from having drunk the local water two days before. The major was likable enough and even his "been there, done that" attitude seemed appropriate since he was, after all, a war veteran of Vietnam and had flown in Turkey during a previous assignment. I was looking forward to really learning something on our flight. Little did I know that I would get a whole lot more than I had bargained for!

After picking up the Turkish officers, we proceeded north to the mountains and the drop-off point. I was familiar with the area after having flown over it during the previous two weeks. Naturally, the major had the controls. He always flew and the other crew member navigated via HHM. This duty assignment was just the way the major

Outside

wanted it and that's the way he got it. The intimidation meter was definitely pegged. It was then that I discovered the reason I hadn't flown with him before. Apparently, the major didn't feel at all comfortable with the missions we were conducting, nor the terrain in which we were flying. His nervousness was less apparent to me since I was busy concentrating on not screwing up. One mistake and I would hear about it for the rest of the exercise.

We flew to the landing site and he began an approach into the wind. Everything seemed to be going according to plan. Then, unexpectedly, the major decided to bypass the usual landing site in order to get closer to the ground commander and his Tactical Operations Center. To do this meant that we would be following an approach to a downwind landing, not a good idea at 8,250 feet indicated, with four passengers and full load of fuel, including auxiliary tank.

There are two reasons I hesitated slightly when I asked the commander about his unusual choice. First of all, I thought he knew what he was doing since he had all that experience. Second, and perhaps most importantly, he intimidated me. It isn't every day a first lieutenant tells a major that the senior pilot is about to do something stupid.

As the aircraft settled into the landing attitude, more power was required to stop the descent—more power than the Huey engine was capable of producing! At that altitude, with that load and a tail wind, the engine "topped out" and the crash sequence began. Golden Rule No.1 is: If the rotor starts to bleed off, don't just pull more collective. This is followed by Golden Rule No.2: If you don't obey Golden Rule No.1, you'll crash. We didn't, and we did.

I remember feeling no panic and calmly watching all of the lights on the caution panel light up as well as the master caution. This, accompanied by the horrifying "whoop-whoop" sound of the low rotor RPM audio warning, meant we were about to confirm one of Newton's basic laws of physics.

We hit the ground with slightly nose low with a right-to-left drift—on my side of the aircraft. We bounced twice and the aircraft came to rest right side up, thank goodness, with spread skids and looking like some kind of helicopter low-rider.

After a four-letter explicative by the major, I directed an emergency shut-down of the aircraft. No response from the major prompted me to go throttle off, fuel off, battery off on my own, and then an ordered egress out the right side of the aircraft. The main rotor was winding down but still coming within a foot of the ground on the left side, because of the collapsed skids. Everyone was OK, but the aircraft was totalled.

Embarrassment, like fame, is fleeting. The fact that I am around to feel embarrassment at all is something I'm thankful for to this day. I learned three important lessons. First, I will never allow my aircraft to be put in an unsafe condition when I have a set of controls. This is not to say I will wrestle the controls away from another pilot when I feel unsure. It simply means that I will not allow an aircraft in which I am a crew member to be set up for an accident again. Second, I must accept my share of the blame for letting the major get our aircraft into trouble. I was too content to let him show me how it's supposed to be done.

Last, I will never again be intimidated by anyone while flying. Rank and ego are not welcome in any aircraft. Trust and communication are the keys to a successful flight. I urge anyone else who has experienced intimidation to get a new mind set. Do not, under any circumstances, allow yourself to be intimidated. I also urge those with a rank-experience chip on their shoulder to take a "chill pill" and leave that "noise" outside the aircraft on your next flight. ◀

Capt. Perkins currently flies OV-1D Mohawks and is stationed at Wiesbaden Air Base, Germany.

Call Sign: Boom-Boom

By Lt. Darren M. Medeiros

With the weather right at minimums, the anxiety level was high as I prepared to start my first night CCA period at NALF San Clemente. There were student S-3 pilots waving off all over the dark San Diego sky. But after five OKs (well, maybe they were fairs), I had my mighty War Hoover well above the clouds and heading back to North Island.

We began our descent toward homeplate with the approach checklist. At "brakes" I reported, "Antiskid on. Brake pressure gauge in the green."

This might have been a good time for my right-seater, an instructor NFO, or the fleet S-3 pilot in the back seat to tell me about their full-stop landing problems, which occurred before I had hot-seated into the aircraft. The antiskid brake system had failed without any warning or illumination of the antiskid-fail light. They had dealt with the problem easily, and had since forgotten it. With no knowledge of impending trouble I prepared for a GCA into weather forecast to be, again, barely above mins. The fun begins!

Although the approach started off a bit rough, I soon found myself in uncharted waters as the controller kept saying "on and on". Closing in on decision height my NFO and I both had the same thought: "What were those missed- approach instructions?" Moments before mins I heard a cheer from my right followed by, "Field in sight." Once he talked me over to centerline I flew the centered ball to touchdown and louder cheers, now from the back seat as well as the right. I fought the urge to relax and reminded myself to concentrate on the landing rollout.

At 100 KIAS, I reported, "Brakes check good." At 80 KIAS, I slowly eased back on the brakes, which still felt fine. Everything by the book. Within seconds, however, the brakes seemed to give way. After telling my NFO, I

slowly added more pressure and the brakes gave out completely. Following NATOPS procedures, I released brake pressure and deselected anti-skid braking. Partly because the limp brake pedals had no "feel", but also from my haste (as Point Loma grew bigger across the water), I had left a slight pressure on the left brake.

As NATOPS warned, "Failure to release brakes prior to repositioning the brake selector switch may result in blown tires." The left tire blew and we slowly drifted left of centerline. When the plane had cocked about 30 degrees to the left, the right tire blew. We quickly slowed to a stop at a 45-degree angle to the runway, about 50 feet left of the centerline. As we sat in the plane and contemplated new call signs, we listened to the duty officer explain to the LSO on the radio how long North Island would be closed because of our FOD, and how long he had to orbit overhead before diverting to El Centro.

As it ended up, the runway was cleared quickly and no one was forced to divert. Yes, I bought a round at the club.

After an emergency simulator and blessing from the standardization officer, I was back on flight status. On my next flight, another full-stop landing in a different aircraft, I experienced a similar problem. At 100 KIAS, brakes checked good. At 80 KIAS I reapplied brake pressure and felt pressure slipping. This time the anti-skid fail light illuminated. We took our time, discussed options, and dealt with the emergency. We were smarter, but what exactly had we learned?

The major difference was in crew coordination. As we lost braking the first time, the conversation went like this.

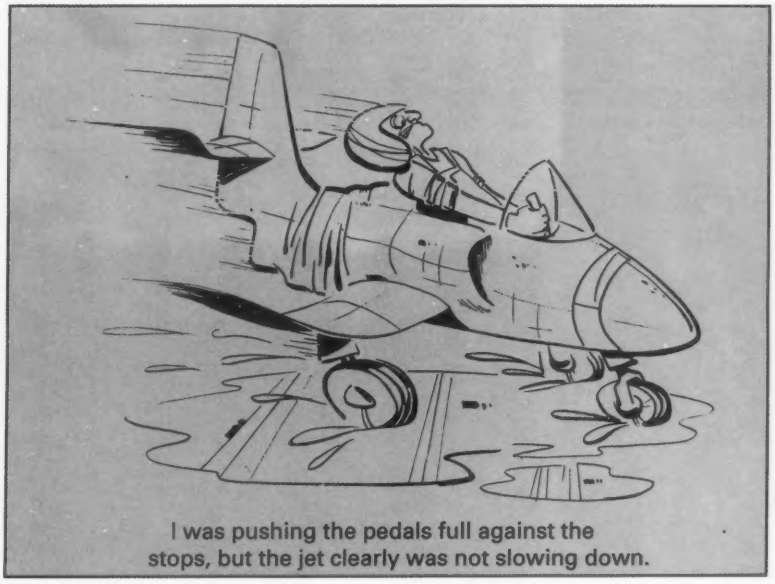
Pilot: "I'm having problems with my brakes. I'm losing my brakes. I've lost the brakes. Switching to normal brakes."

NFO: "Uh-oh."

After the flight I realized that I had reverted to single-seat mentality. When I deselected antiskid braking, I thought that I had released brake pressure. I had no idea, however, if my NFO had tried his brakes. Had he done so, my switching the brakes would have instantly blown both tires. Though that did not happen, I still handled the situation poorly.

During the next flight the conversation between pilot and NFO had much more give and take. I told him exactly what I wanted to do, and asked for his input. After he concurred, I deliberately went through procedures according to NATOPS. We discussed lowering the tailhook and were ready to do so had the situation become worse.

As an FRS student just out of A-4s, it is difficult to use the instructor sitting next to you as an assistant, but that is precisely what aircrew coordination concepts say we must do.



I was pushing the pedals full against the stops, but the jet clearly was not slowing down.

There are more learning points to look at. It should be obvious that our hot-seat aircraft turnaround wasn't smooth. It is easy to fault the NFO and pilot-in-command for not telling me about the troubles they had with the brakes. It is also my responsibility, however, to specifically ask if there had been any maintenance-type problems during previous flights. Before taking over as pilot-in-command, a proper turnover of responsibility must take place.

I also feel that as an aircrew we came dangerously close to breaking a cardinal rule of naval aviation: The flight isn't over until the paperwork is done. There were three separate times when I felt myself relaxing, thinking the flight was close to over. The first was leaving San Clemente and climbing out of the clouds. The next was breaking out and seeing the field. Finally, there is always the tendency to relax as the wheels touch the deck on full-stop landing.

We proved once again how quickly things can get out of hand, especially at the end of a flight. There is never time to relax and "cheer" while jet engines are still turning. ◄

Lt. Medeiros flies with VS-41.

One of the Top Five Things I Hate to Do on a Sunday, or *So, You Thought the Braves Were a Long Shot...*

By Lt. Guido J. Lastra

"What? You want to do a FOD walkdown of the runway on a Sunday morning at first light?" That was the general response I got after one of our E-6As blew a tire during a touch-and-go.

As the ASO I was called in to investigate this incident. Trying to decide why a tire failed is guesswork, unless the pilot declares a hard landing or someone discovers a maintenance problem. No such luck today.

However, as we checked the side of the aircraft with the blown tire, the damage pattern suggested that something like a bolt and washer had been hurled into the flap. I wanted a walkdown to look for the offending piece. I knew that the base had cleared the runway, but I wondered if, by chance, the cause could be laying on the side. We felt like we were looking for loose change on the beach. You know it's there but you're not going to find it.

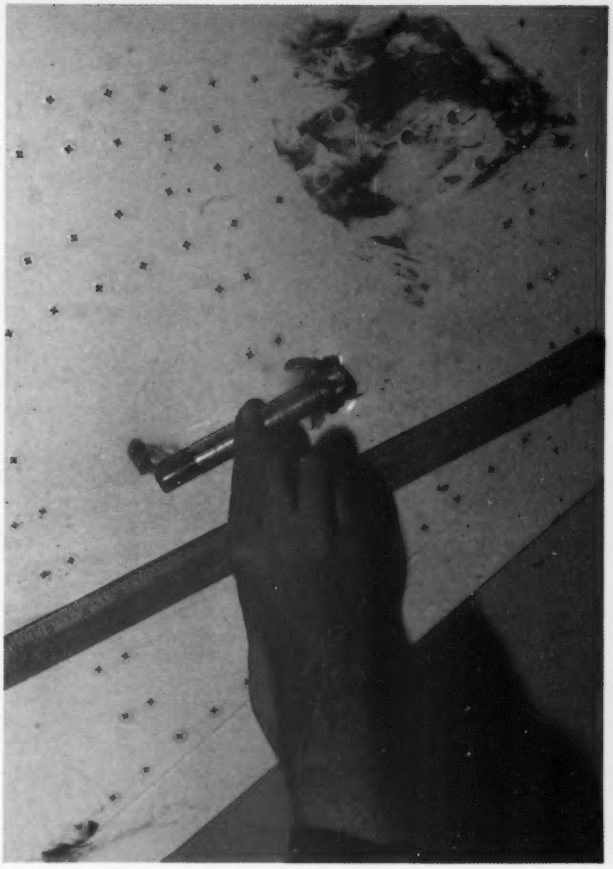
The duty section wasn't too eager to participate. My CO thought it was a good idea, though.

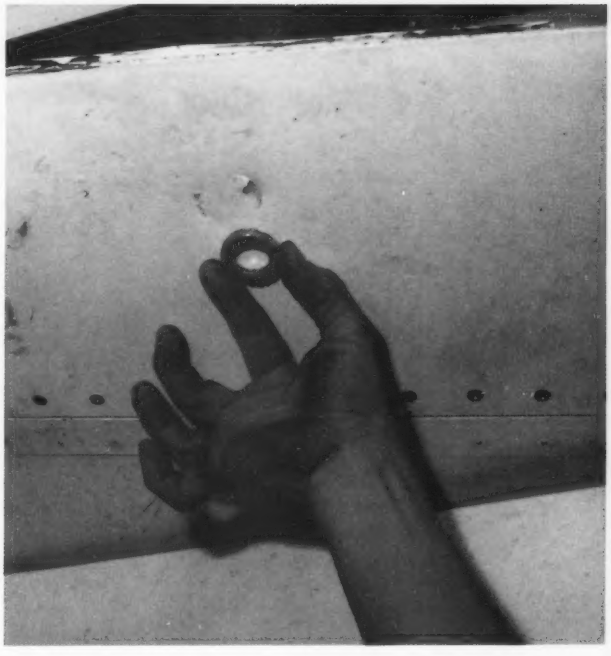
Close examination of the runway and skid marks revealed exactly where the tire hit something and burst. We concentrated our efforts near the skid marks. When one of our sailors discovered a six-inch bolt with washer, we weren't surprised when they fit into the dents on the damaged flap.

Too often, we only guess about the cause of a mishap. I knew it was a long shot, but so were the 1991 Atlanta Braves. Our team could have gone through the motions, knowing they had a one-percent chance of finding anything. But we found the needle.

Don't settle for "cause unknown" just because looking is too hard. Dig deeper and shoot further. You may just find what you're looking for and discover the real cause. ◀

Lt. Lastra is an E-6A pilot with VQ-3.





Canopy Depa

By Capt. Phil Rogers, USMC

We taxied slowly up the ramp to the transient line. We had just finished a fantastic low-level and now all that lay between us and an airshow was a quick gas-and-go and an hour flight. I started my post-flight checklists, securing essentials, stowing gear and unstrapping. Visiting a transient Navy line is a no-brainer; you can be assured that you are in good hands.

As the plane came to a stop, my pilot and I completed our checklists and secured the engines. At this point the usual assortment of flight-line personnel scurried about doing their business. My young, energetic pilot grabbed his flight pubs and gear and stepped out of the cockpit, leaning back into the Intruder to pin the seats.

As I assembled my plethora of charts, en-route supplements and cross-country garbage, I noticed that my boarding ladder had not been unfolded and let down. I told my pilot to send the plane captain around to lower my ladder so that I could eventually dismount. I saw him motion to someone to come to my side and get the boarding ladder.

Perhaps I was too busy packing my gear or maybe I had the airshow on my mind, but the boarding ladder not being down should have cued me to other unorthodox shutdown procedures. Usually the first plane captain to stop the plane will release both ladders and then allow the plane to come to a stop and shut down. In any case, my curiosity should have been aroused.

The young E-1 who appeared quickly on my side did not draw any special notice. As I continued to stow my gear and prepare to get up I noticed him looking at me inquisitively. I glared down and he pointed at what I

ïting!

thought was the boarding ladder. I nodded, affirming that I wanted my boarding ladder down. As I looked back inside to zip shut my helmet bag, I immediately sensed something wrong. Blocked by the curvature of the side of the A-6E, I could not see the transient lineman. I should have seen his hand reaching up for the boarding ladder release and heard the familiar click of the release.

As I spun my head to the right I realized it was too late as I heard the boom of the canopy blowing away. I caught the E-1's bewildered look, and as I shook my head in disbelief, his young face contorted into fear and shock.

Fifty feet behind our Intruder lay our cracked canopy. My pilot was still on the boarding ladder, resting his hand on the outside of the canopy when it blew away. His response was not as stoic as mine. He charged around the plane hell-bent on strangling someone when he saw the young E-1 collapsing to the ground in shock and tears. I slowly climbed out of the cockpit. So much for the airshow; I wasn't looking forward to calling our skipper, especially since it was his name on the side of double-nuts.

As we stared in disbelief at the monumental gaffe, there was no question that the E-1 had made a mistake. But as aircrew, we are instilled with the fierce responsibility that it is our aircraft and that we are accountable for what happens to it. Taxiing into a friendly base, especially when it is one of our sister services, lulled us into a safe stupor. As it turned out, the E-1 had never recovered an A-6E before and despite all the warnings that decorate the emergency access door, he pulled it anyway. ◀

Capt. Rogers is a BN with VMA(AW)-224.

PHC Denis Keske

How We $aved Uncle Sam Two Porsches

By Cdr. Skip Sayers

Deployed to the Mediterranean for only a few short weeks, my nugget pilot and I found ourselves in a most unsavory airborne situation facing an night divert with 4,000 pounds of unusable fuel.

This story begins with the usual CV brief, a thorough preflight, and an uneventful takeoff for an airborne intercept mission. Ho, hum.

Following what seemed a harder-than-normal cat shot, our F-14B climbed out with an apparent Environmental Control System (ECS) failure. To those who fly Tomcats, the significance of this failure mode is immediate. Translated, an ECS bleed duct failure can quickly become unrecoverable; 400-degree bleed air can cause fires in the engine or avionics compartments. Failures of this system have caused several Class A mishaps and F-14 crews take this problem very seriously.

Our aircraft carried the typical fleet appendages—external tanks and various weapons rails and ordnance—that complicated how we approached the failure. The ECS provides not only the cockpit air conditioning, but it also supplies the delivery medium to transfer the external fuel into the fuselage tanks. Since we were not on fire, our focus shifted to transferring fuel in the external tanks.

Based on these factors and my 3,500 hours in the Tomcat, I suggested we manually secure the air source. I quickly broke out the pocket checklist to verify the emergency procedure. My nugget pilot selected air source off and continued to aviate while I communicated to the ship for a squadron representative to talk over our options.

After several minutes the radio crackled with the voice of one of the squadron's most knowledgeable pilots. We explained the circumstances surrounding the ECS shutdown and told him that our only indication was a cooling-air light in the rear cockpit. This is unusual because normally catastrophic ECS turbine failures have been accompanied by loud thumps, whines, circuit-breaker pops, bleed-duct lights and circuit-breaker panel heat. We saw none of the adverse symptoms of an ECS turbine that had come apart or a bleed duct that had sprung a leak.

We asked the squadron rep to brief the powers-that-be and began looking into our options—jettison or divert.

The PCL is very specific in recommending air source off and recovering as soon as practicable in our situation. Shipboard operations preclude recovery with full drop tanks and the thought of jettisoning the equivalent of two $57,000 Porsches didn't make me feel comfortable. The divert option also had its negative aspects since we were carrying live ordnance and our usable fuel would be reduced by the 4,000 pounds trapped in the external tanks.

Several minutes had passed while my pilot and I were sweating in our "hot-house" cockpit. The squadron representative conferred with CAG and had called maintenance control to check the aircraft discrepancy book. To our surprise the next voice we heard was one of our AMEs, who asked a few questions about the ECS shutdown. He then suggested we make one attempt at troubleshooting the problem.

Considering the PCL's doom-and-gloom and the fact it was our lives on the line, we agreed. He asked us to cycle the air-source control circuitbreaker (RC2) in the front cockpit. Expecting the worst, my pilot cautiously reached down locating the circuitbreaker, cycled it and re-selected the ECS to the normal "both" position.

Cool air rushed into the cockpit like a hurricane and all indications of failure dissipated along with the heat. We reported the results of the "magic" procedure and completed our mission.

When we returned to Maintenance Control, we thanked the AME who helped us out and saved the government the equivalent of two sports cars. A proponent of strictly following NATOPS, I asked him to explain this unorthodox procedure.

The ensuing discussion about electrical relays, "item one" valves and the effects of removing electrical power via the circuitbreaker to reset the relay was beyond me; however, the solution seemed straightforward and we submitted the procedure to the F-14 NATOPS Change Review Board for consideration as an ECS troubleshooting technique. Until it comes out in black-and-white, the procedure isn't gospel but you might tuck it away in your bag of tricks.

So, what caused the problem? The cat shot made the ECS' item-one valve close off the power to the ECS. The aircraft had no history of ECS problems, nor were any ECS malfunctions present before the cat shot. We cycled the air-source control circuitbreaker only after careful analysis of the circumstances surrounding the failure. ◀

Cdr. Sayers is the XO of VF-74.

Cpl. J.H. Bostick, USMC

Wasn't This Auto Supposed to Be Practice?

By Capt. Christopher S. Owens, USMC

For an instructor in the FRS, day or night FAM hops can become so routine that they can also become dangerous. I had recently passed the two-year mark in the AH-1W FRS. I knew the local pattern around MCAS Camp Pendleton. My RAC (replacement aircrew) had done well in the syllabus and tonight's FAM hop would probably be another solid "X." Tonight that routine would almost cause a mishap.

We would stay in the pattern and make basic approaches, with a variety of simulated emergencies and practice autorotations, which we would end with power at 3-5 feet AGL.

The winds were uncharacteristically from the southeast, blowing directly across the duty runway into the parallel grass area where we completed most of our approaches. This positioning required minor adjustments during approaches, and more significant adjustments during autorotations. We could handle it...or so we thought.

After several autorotations, I felt that the RAC could use a break. I took the controls and shot a couple of autorotations from the 180-degree position to the grass area next to the runway. We set up for another autorotation, and tower cleared us, advising, "Caution, wake turbulence, CH-46 departing runway 21." I acknowledged the call but gave it little thought as parallel operations were routine. With the prevailing winds generally straight down the runway, wake turbulence is rarely a problem.

The auto progressed normally until I began the recovery by rolling on the twist-grip throttles in the flare, leveling the skids and adding collective. Following a normal flare, I lowered the nose and added collective to stop the descent, but the rate of descent suddenly *increased*. I thought we had suffered a single-engine rollback, but with no other options available, I leveled off and pulled all the collective I had. Nr drooped to 90 percent and we touched down firmly, sliding to a stop in about 50 feet. As we stopped, I saw the CH-46 at our 11 o'clock. It was transitioning from a hover to forward flight. Both of our engines were OK.

The Sea Knight's rotor wash had blown out our cushion as I tried to recover from the auto. Fortunately, the skids were aligned at touchdown, saving us from severely damaging the aircraft. We taxied back to the line for the obligatory overtorque inspection, and after a quiet but thorough debrief, we called it a night.

I relaxed because everything had been going so well. I discounted the effect of the CH-46's rotor wash and nearly paid the price. Wake turbulence doesn't have to come from a C-5 to cause problems, especially during critical moments. ◀

Capt. Owens was an instructor with HMT-303 at the time of this incident. He is currently assigned to HMLA-367.

Wire-Guided Huey

By Lt. Cole Hayward

"Let's fly the river home," my copilot suggested. It was time to head back to Fallon after a SAR training hop.

"Sure," I replied. The Carson River provides a direct route from Carson City to NAS Fallon and we SAR helo crews frequently use sections of the river for training in confined-area rescue procedures.

My copilot had the controls; he had demonstrated a knack for mountain flying in Hueys during previous hops. He opted to fly a terrain-flight profile along the river between 150 feet and 200 feet AGL, at 100 knots. Within five minutes, we entered a steep, narrow canyon. The beautiful, clear weather of the high Nevada desert gave us maximum visibility. As I watched a low set of powerlines pass well beneath us, I didn't even mention them to the other crewmen.

As we finished crossing the three-mile-wide canyon, I was scanning the terrain in front of us and beginning to consider my good fortune in getting orders to Fallon. We reached the east mouth of the canyon.

I saw the powerlines at the same time, not more than six feet in front of our helo, going under the nose as we were moving at 100 knots. My hands and feet instinctively lurched for the controls. I had read reports of wire strikes. I figured in a microsecond that we needed backstick to drive the wirecutter through the line and avoid letting the nose getting pulled over to the point of no return. I never got the chance.

In a second, the Huey's nose dipped gently downward about five degrees before returning to a level attitude. In that same second, I heard am ugly scraping sound and the port-side crewman saw a bright yellow flash.

It was obvious to everyone that we had just survived a wire strike. I descended straight ahead to a two-foot hover over an alfalfa field near the river. I told the crew that I thought we should check our landing gear before we tried to land. The crew chief jumped out and reported surface burn marks six inches below both skid toes, along with a one-foot section of lacerations and coin-sized holes near the right saddle of the forward cross-tube. With our integrity check complete, we landed, shut down and saw a two-inch diameter hole in the right skid endcap, which was the suspected point of voltage departure—the point where *69,000 volts* of electricity blew out the back of the skid.

I called the power company and the sheriff's office to let them know what had happened. One of the three lines was severed when we "bobsledded" across the wires. The downed line ignited sagebrush for a few minutes so I recommended to the sheriff's dispatcher that a fire crew come out, just in case.

We nervously discussed the incident. None of us had seen the wires until it was too late. Checking them from the ground, the wires were nearly invisible from any angle that didn't have the sky as a background. It was also obvious that any aircrew approaching from the west would not be able to see the poles that spanned the river since they were masked by ridges on both sides. In fact, the owner of the alfalfa field, who saw the wire strike, confirmed our suspicions when he said he had seen six other small aircraft fly under the wires since 1967.

Wires and other obstacles to terrain flight are shown on VFR sectionals and hazard maps. However, sectionals are large-scale, providing general information to hazard locations. Hazard maps don't plot all wires. Do you know exactly where all the obstacles are in your operating area? Like me, you probably think that your general orientation is enough to keep you alive.

Even when shown on charts, wires can be dangerous. The San Bernardino area of California and the island of Oahu in Hawaii have wires that span great distances while hanging hundreds of feet above the ground. Orange-ball markers, regular ground training and diligent preflight briefs can make the difference between avoiding obstacles and catastrophe.

I've gained a lot of experience in five years of flying Hueys, but where can we go outside NATOPS and other Navy instructions for more information on avoiding obstacles? The Army, with its long history of terrain-flight experiences, is a good source for information on wire strikes. The June 1992 issue of *Flightfax* (published by the Army Safety Center, Fort Rucker, AL 36362-5363) contains an article on safe flight trajectories, speeds and altitudes. ◀

Lt. Hayward is the HH-1N NATOPS Officer and Instructor at NAS Fallon.

THE PAPER AND INK USED IN THE ORIGINAL PULICATION MAY AFFECT THE QUALITY OF THE MICROFORM EDITION.

100 Knots and

By LCdr. M.D. Guadagnini and Lt. S.P. McFarlane

Does it get any better than this for attack guys? A long-range, division strike to a new target, clear and a million from Oceana to Michigan, and money in our pockets. We were psyched for this one, and after we found out that we'd be getting five hours of much-needed flight time, with enough time for lunch at the stopover, we were in Intruder heaven.

During our thorough division and crew briefs, we talked about abort criteria as well as the weather conditions in Michigan, which included a temperature of 25 degrees and the fact that our low-level route took us over several lakes.

When we started the port engine, we had an 80-percent low-oil quantity light that wouldn't go out after scavenging. We shut down the engine for servicing. Everything worked fine after the second start so we taxied.

After brake release for takeoff, the master caution light lit up, but by the time we looked at the annunciator panel, there were no caution lights and the master caution light was out. We continued the takeoff.

Except for a few snow showers that weren't in the forecast, the flight was awesome. We knocked the daylights out of the target and headed to the field for the debrief and turnaround. When we landed, we found that the

arresting gear was out of service, which changed our abort criteria significantly. After lunch and a thorough brief, we manned up for the flight home.

From the left seat:

Shortly after I released the brakes, the master caution light came on again, just like the first takeoff from Oceana. This time, however, the left low-oil quantity light was also flickering. It went out almost immediately. I acknowledged my BN's call to continue.

At 80 knots, the caution light came on steady, with good oil pressure, but we continued the takeoff since we had now reached the high-speed abort regime. We had briefed not to abort for a caution light affecting only one engine.

Then, at about 100 knots, the right low-oil light also came on steady. Now both engines had problems.

"501's aborting," I called over the UHF, alerting the tower and my BN.

As I pulled the throttles to idle and extended the speedbrakes, I heard my BN calling out the boldface procedures. Having been in a high-speed abort situation before, and having read about similar incidents in *Approach*, I knew not to jump on the binders too soon. I slowly pulled back on the stick to aerobrake as much as possible.

At this time I cycled my scan inside the cockpit for airspeed and engine information and outside to maintain runway centerline and to monitor how much runway we had remaining. At 85 knots, the nosewheel returned to the deck and I applied the brakes, increasing foot pressure steadily until we stopped.

From the right seat:

Having briefed a 10-second interval, we followed the lead A-6 onto the 9,000-foot runway, certain that we'd soon be on our way home. Everything looked good on the runup as we passed a thumbs-up and started the clock.

A few seconds after starting our roll, we saw a brief flicker on the left low-oil light. It went out immediately and I said, "Continue."

With 80 knots, and off nosewheel steering, we entered our high-speed abort regime since there was no short-field gear to announce our usual 100-knot transition point. Now we got the oil light again, and this time it stayed on steady.

We had briefed not to abort for a single engine warning, so we acknowledged the light to ourselves and kept going. I was concerned about the light, but we knew our abort criteria and stuck to it.

As the airspeed indicator passed 100 knots, the right low-oil light illuminated steady and after what seemed like an eternity, we aborted, going through the boldface items, "idle, boards, brakes." All we could do now was wait, and since the field had no arresting or overrun gear, I found myself trying to remember what we had briefed for going off the runway.

My first concern would normally have been the pilot getting on the brakes too soon. I was relieved when the nose came up to aerobrake. Although I didn't check the engine tapes after we decided to abort, I did glance at the hydraulic gauges, just to alleviate any fears of going off the runway. In the A-6, the ability to control the aircraft directionally and stop it is tied to the hydraulic system.

Although both oil lights were steady at 100 knots, adding the estimated 1.5 seconds that is require to initiate the boldface means that we actually started decelerating at about 120 knots. We stopped with about 800 feet of runway in front of us. The outcome could have been different, however, if we had aborted at our refusal speed of 144 knots, which in this case, was equal to rotation speed. I was grateful that we had carefully briefed what to do in this situation.

Nowhere to Go

Many abort situations begin with a non-abort emergency. You have to know your precise criteria at each airspeed cutoff. I know I'm guilty of treating the abort decision more casually than I should when I'm at home with a 12,000-foot runway, two sets of arresting gear and an overrun. But what about unfamiliar fields? Is there an overrun gear? Are there number boards along the runway? What is the terrain off the end and are you going to stay with the aircraft off the end? What instruments will you scan after you abort? Do you know not to get on the brakes too early? What if you receive a high-speed abort indication between refusal and rotation speeds? ◄

LCdr. Guadagnini and Lt. McFarlane fly with VA-65.

Kneeling left to right: Lt. Mario Pereira, Lt. Brett Seylar. Standing left to right: AMSAN Jeffrey Ford, AMH2 Edward Beouy, AD3 Christopher Tootle, AMSC James Morelli, AMH3 Gregory Kooch

Lt. Mario Pereira
Lt. Brett Seylar
AMSC James Morelli
AMH2 Edward Beouy
AMH3 Gregory Kooch
AD3 Christopher Tootle
AMSAN Jeffrey Ford
HM-15

Hurricane 11 was at 85 feet and 18 knots ground speed towing a minehunting sonar. Suddenly, the MH-53E's crew felt their helicopter shudder. They checked their aircraft but couldn't find anything wrong and continued the mission.

Five minutes later, after another shudder, AD3 Tootle (crew chief) saw smoke and sparks coming from the fold area of the tail pylon. The flag for the tail-rotor disconnect coupling had dropped into the "disengaged" position. The aircraft accelerated into a rapid right yaw despite full left pedal.

Lt. Seylar (copilot) maintained a level attitude and reduced collective, slowing the right yaw and starting a descent. Lt. Pereira (HAC) retarded the engine-speed levers and transmitted a short mayday.

The helo completed three revolutions. During the descent, Lt. Seylar landed the aircraft into the water in a flat attitude. The MH-53E continued to yaw another 180 degrees before stopping, floating upright, slightly tail low.

The crew exited the aircraft into 50-degree water where they were rescued by USS *Conquest* (MSO-488).

The helicopter was eventually salvaged. Investigation revealed that the bearings for the tail-rotor disconnect coupling had failed, causing the tail-rotor drive shaft to shear.

MH-53E from HM-15 being hoisted from the Straits of Juan de Fuca off NAS Whidbey Island by floating crane.

LCdr. Dave Spangler
Lt. Greg Briolat
VF-21

After an ACM hop, Freelance 207's yaw stab op light illuminated and could not be reset. LCdr. Spangler (pilot) and Lt. Briolat (RIO) checked their aircraft's controllability and decided that everything was normal, except for a slight ratchet in roll (right and left).

The crew flew a 350-knot level break over USS *Independence* (CV-62). Passing 300 KIAS, LCdr. Spangler moved the wings forward, and at 280 KIAS, he lowered the gear. As the pilot relaxed G and began to roll out on the downwind, the F-14 began an uncommanded left roll to approximately 100 degrees wing down, 10 degrees nose low.

The master caution light came on and LCdr. Spangler quickly applied rudder and stick to counter the roll and yaw. A check of the caution lights showed Roll No. 1 and 2 lit, besides the yaw stab op light. The aircraft seemed to counter control inputs and was rapidly descending through 500 feet.

LCdr. Spangler quickly pulled the circuit breaker for the roll computer. Disabling the roll computer increased

the effectiveness of the flight controls and the aircraft stabilized. LCdr. Spangler selected afterburner and raised the gear. During this time, Lt. Briolat had been watching the altitude and as the aircraft passed 200 feet, he called, "Have you got it?"

As the pilot was about to call "Eject!" he felt the horizontal stabs dig in after a brief unload and saw the AOA break.

"I've got it!" he told his RIO, and recovered at 100 feet MSL.

Postflight troubleshooting revealed both roll and yaw computers had failed, as had the AFCS relay rack. The aileron-rudder interconnect (ARI) system had also failed. Airframe change 566 disconnected the Tomcat's ARI after simultaneous AFCS and ARI failures caused two Class A mishaps. Both aircraft had been lost in the break at NAS Miramar. An investigation is continuing to see how the ARI in Freelance 207 was reconnected.

Left to right: Lt. Greg Briolat, LCdr. Dave Spangler

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Capt. J.P. McDermott, USMC
VMA-223

Capt. McDermott finished a 1 v 1 ACM sortie and headed back to MCAS Iwakuni. Since visibility was marginal, the Harriers split up for individual PARs. When he lowered his nozzles to 20 degrees to begin the approach, Capt. McDermott noticed a minor fishtailing, which dampened itself out.

One mile from touchdown, passing through 500 feet, he lowered his nozzles to 50 degrees to begin final deceleration for a vertical landing. As he slowed through 100 knots, he felt the aircraft yaw left, then hard right. He applied full power and left rudder, moved his nozzles aft and entered the Delta pattern.

Capt. McDermott considered his options and decided to make a slow landing with half-left rudder and his nozzles set at 40 degrees. This configuration would permit a trade-off of a slower landing speed with the engine providing some lift, yet still be fast enough for conventional flight controls to remain effective.

A postflight inspection showed that the yaw-reaction control shutter, which helps control the AV-8B in vertical flight, had disconnected and was fully open on the right side. Capt. McDermott's decision on aircraft configuration and approach speed was critical. If he had landed at a faster speed and needed to use the nozzles to slow the aircraft, the excess yaw that the open RCS shutter would have generated would have probably sent the Harrier off the runway at high speed. If Capt. McDermott had used a higher nozzle angle for a slower approach, he would not have been able to maintain control of the aircraft in flight.

Yeah, We Earned Our Flight Pay Tonight!

By Lt. Dave Schneider

The three-hour SSC mission had gone smoothly. As we headed back to the ship, I began to think about the recovery. It was a dark and moonless night. Choppy seas made for less-than-desirable deck conditions. I knew we would earn our flight pay tonight.

As an H2P on my second short cruise, I was anxious to show the HAC that I was capable of handling the aircraft under any circumstances. However, I decided not to argue with him when he announced he was going to do the landing.

We orbited overhead at 400 feet while the ship went to flight quarters. Our three ship SAG had been conducting a formation steaming exercise and was reluctant to change course for better recovery winds. After a short wait the ship called up with the vitals—relative winds, 50 degrees to port at 30 knots, pitch 2 roll 5, green deck.

I consulted the PCL wind charts for a starboard-to-port night approach to a FF-1052-class ship. I found that the winds were right on the edge of the envelope, but reasoned that the edge must be good enough or they wouldn't be part of the envelope. (Unfortunately, I failed to check the turn-on-a-spot-wind envelope).

I told the HAC that the winds were on the edge, but still good enough for landing. The HAC called the ship, rogered the winds and began to set up for the approach.

Our aircrewman called radar ranges every quarter mile, while I scanned the gauges and reported altitude off the radalt. Everything went perfectly until we crossed the deck edge. The pitching, rolling deck, combined with the horizonless night, had the HAC working overtime as he tried to stabilize the aircraft over the spot. I began talking him into the landing circle, calling "easy left, easy down." After repeating these calls two or three times I realized we were actually starting to climb a little and drifting farther right of the circle.

As I looked up from the deck to see if there was something going on that I wasn't aware of, the HAC announced, "I'm waving off!" The fact that he was waving off didn't disturb me, but he was waving off in the wrong direction—starboard instead of port and I didn't know why!

I was concerned about the effect the winds would now have on the aircraft and called, "Watch the winds," as he began his power pull and slide to the right. Just as we crossed the starboard deck edge, the rollercoaster ride began with the aircraft snapping to the right and spinning violently out of control.

Everything happened so fast there was no way we could have reacted quickly enough to avoid the situation or even talk about what was going on. For a fraction of a second I just froze. All I could think of was how cold that water was and how badly I didn't want to get wet. I remember seeing the ship's lights race by from right to left, again and again.

I regained my senses and realized what had happened. The winds we encountered by waving off to the right caused us to lose tail-rotor authority. We hadn't said anything in the cockpit since this started and I wasn't sure if the HAC knew what was going on so I called over the ICS "Do you have it?".

The HAC replied "I got it! I got it!".

I called "You got it! Fly out of it!".

The HAC again replied "I got it! I'm flying out of it!" and then began to go through the procedures for URY (unanticipated right yaw) while simultaneously saying them out loud.

I knew that both of us were at least aware of what was happening and the HAC was doing everything he could to straighten things out. Because of the spinning, I was completely disoriented. I began an instrument scan to reorient myself and started calling out altitude to assist the HAC in reorienting himself. I was still concerned with our relative position to the ship and the water. I really didn't want to get wet.

The yaw rate began to slow and finally after what seemed the longest eight seconds of my life, the world stopped spinning. We were in a hover at 900 feet over the top of our ship.

The HAC gave me the controls as he tried to cage himself. After a quick conversation in the cabin, we determined we were all still in working order and the aircraft

appeared to be flying normally. We told our dazed aircrewman what had happened and asked him for radar vectors to an approach since we were still somewhat disoriented.

As we set ourselves up for the approach, we called the ship and requested better winds. I could tell by the HAC's tone of voice that he was upset. The ship didn't hesitate to reposition for better winds. This time the winds were right in the middle of the envelope. As I rolled onto final the HAC took back the controls and brought us in for a controlled, uneventful landing.

During the debrief the HAC explained that everything had gone normally for him up to the point he crossed the deck and began a pedal turn to the right to line the aircraft up for a fore-and-aft landing. While maneuvering for landing he realized he was using full left pedal to align the aircraft but the aircraft was continuing to the right. He had to wave off to the right because he felt that if he tried to go to the left he would have lost control and spun into the hangar.

As we crossed the deck on waveoff, the turbulent winds around the ship's superstructure, combined with the power pull on waveoff, further aggravated the uncommanded right yaw.

Cdr. T.C. Davis, Jr.

My contribution to the cause of this event was inexperience around this class of ship. Knox-class frigates are the only class of ships with a separate wind envelope for turn-on-the-spot over the deck for the SH-2F.

The HAC called the ship when reporting final and reported his intentions for a turn on the spot for a fore-and-aft landing. This should have prompted me to look at the turn-on-the-spot envelope, in which case I would have realized the winds were out of limits for this maneuver.

The bridge crew of the ship also realized they should have been less concerned with the formation steaming exercise and more concerned with providing optimum recovery conditions given the weather at the time. Yes, it takes a little more effort to figure the best course for recovering the helo, but considering what's at stake, it's worth it.

All too often we don't tell the CO that we'd prefer better winds because he may not be so willing to let us fly the next time. We all know that's a fate worse than death.

It's true that if the winds on the edge of the envelope weren't good enough, they wouldn't be part of it, but there are many other factors to consider, such as pilot proficiency, a visible horizon, aircrew fatigue, and aircraft reliability.

Sometimes circumstances require us to accept less-than-optimum winds but not as often as we do it. Why not try to get the best winds possible for takeoff and landing whenever we can? You never know when you're going to have a single-engine failure on short final or slide off the deck edge for launch. Optimum winds make the difference between going for a swim or watching the movie.—Lt. Paul Romaine, Naval Safety Center H-2 Analyst ◀

Lt. Schneider was an SH-2F HAC with HSL-35. He recently transferred to VT-27.

By Lt. Brad Kidwell

Hawkeye, Ball...Hot!

The LSOs realized something was wrong as shrapnel from the turbine gave a shower of sparks.

PH1 Michael D.P. Flynn

We had just finished an uneventful 3.5-hour "Gulf Cop" mission and were preparing for a night recovery onboard USS *Independence* (CV-62). As we pushed out of marshal, I joked with my nugget copilot.

"Got a full moon, light winds, and a little afterglow from the sunset. I've already got the OK. Why even fly it?"

As we concentrated on hitting the numbers on an approach, we began noticing that the cockpit was getting unbearably warm.

"No problem," I said. "The air conditioning's automatic temperature controller is lagging. I'll just go to manual and bump the temperature down."

A few moments later, we were comfortable again.

Approaching six miles, we slowed to gear speed and dirtied up as my copilot read off the landing checks. The back end confirmed the NFOs were all strapped in and backing us up on the radios. We were on course, on altitude, nearing our three-mile tipover and looking good—except that the cockpit was getting warm again. I reached down to decrease the temperature before dimming the cockpit lighting to make the meatball easier to see.

At three-quarters of a mile, my copilot called, "602, Hawkeye, ball, 4.2."

"Roger, ball, Hawkeye," the LSO replied. Right after that exchange, we heard the screech of the air conditioning's turbine as it failed. The timing couldn't have been worse.

As the shrill whine and scalding hot smoke filled the cockpit, I instinctively reached up to shut off my diffuser so I could see. Good. Next, I looked down to shut off the switch to silence the deafening whine of the dying turbine. Bad.

"Where is that switch?" I moaned. "I can't find it!"

Meanwhile, the LSOs realized something was wrong as shrapnel from the turbine gave a shower of sparks from the radar liquid-cooling scoop. A timely "Fly the ball" from my copilot and a calming "Don't climb" from the LSO got my attention back to where it should have been—flying the plane. By letting a minor emergency divert my concentration from flying the ball, I had broken a cardinal rule: aviate first.

We got the plane on deck, then secured the air-conditioning turbine. It's amazing how easy it was to simply reach over and turn off the switch once we were through the most critical part of the flight.

This 20-second lesson showed me again why the word "aviate" is first in the old aviator's credo of aviate, navigate, communicate. ◀

Lt. Kidwell is an E-2C pilot with VAW-115.

By LtCol. M.R. Hafen, USMC

EXPERIENCE +TRAINING =SAFETY?

I have flown single-seat jets for the Corps for more than 17 years. However, I have been scared more often while flying the T-39 and C-12 for the past four years than during the thousands of previous tactical flights. That may sound unusual, but let me explain why I feel it has happened.

In a tactical squadron, comradery is openly and intentionally fostered between all crewmembers. They work together, train together, and also socialize together. Most have common goals, and have finished similar training pipelines to get to their squadron. Selective scheduling, training-and-readiness progress, and flying with the same folks month after month minimizes surprises in the cockpit.

By comparison, when aviators are assigned to an MCAS, or are augment pilots flying the station T-39 or C-12, they will often be scheduled to fly with pilots from different organizations stationed at different bases. Most will have different backgrounds in aviation that will be combinations of jet, prop, or helo.

My last unit had more than 35 pilots flying the C-12 and it was possible to not fly with the same pilot twice in a year. One of my more memorable and last flights in the C-12 involved sliding down the runway in the middle of a snow storm at Hill AFB, Utah. The aircraft commander had mistakenly applied brake pressure when we touched down. After shutdown, I learned he had never before landed an aircraft in the snow. His background was helos and he had spent his entire career in southern California out of the snow country. Had I taken the time to find out something about his aviation career, I might have prevented this near mishap.

As an instructor in the T-39, I have had it emphatically reinforced to me that even though a pilot wears gold wings, his prior aviation experiences may not have recently included unusual attitude recoveries, high-altitude jet landings, or single-engine operations.

Take the time during the flight brief to find out where your copilot or aircraft commander spent his time. Had I done this with a helo pilot who transitioned to the T-39, we would not have been at near-zero airspeed after a series of incorrect flight-control inputs during an unusual aircraft recovery maneuver.

Don't assume that senior pilot next to you is going to perform as you would in each given situation. You may be surprised, embarrassed, or honestly scared as I have been. Experience and training do influence safety, but only you can make it a reality for your next flight. ◀

LtCol. Hafen is assigned to MCAS Futenma

Lt. Gary Peterson

When Is an Engine Fire Not an Engine Fire?

"510, you're on fire," the wingman called. "You've got flames coming out of your port tailpipe! Wait, it's not flames, it's sparks. You've got sparks coming out of the engine. It looks like it's severely FODed. Declare an emergency and head home. You keep the lead."

These words are not what you want to hear from your wingman at night, before descending for a low-altitude strike mission. I was in the wing aircraft. As we headed back to base I was running through all of the possible procedures to assist the lead if things got worse quickly.

It was the last week of the air wing Fallon detachment. We were in the middle of the advanced training phase—the "war" portion of training. The squadron had been doing very well, especially at night during the first two weeks. But now the war had begun and every sortie was vital.

It had been a long hard det with hours of planning and preparation before each of three strikes per day. When we finally got airborne, we really wanted to do well and have fun. An aircraft fire didn't fit into the plan.

The night mission was a four-plane low-altitude strike against a heavily defended target. Our squadron was the first A-6 squadron on the West Coast to be qualified on night vision goggles. The NVGs made a big difference in our tactics and success in the target area. We were also learning a lot of lessons. This night we were working mixed sections with the non-NVG crew in the lead. The goggled wingmen were able to fly almost any formation with virtually all of lead's exterior lights out.

The hop started out perfectly with all four aircraft ready to take off on time. We flew to the holding point and completed our combat checklists, which included putting on the NVGs. About two minutes before the mission, our lead's engine troubles started.

Sparks began pulsing out of the tailpipe every few seconds. We assumed it was related to increased throttle settings, as lead was jockeying into position to make the push time. I had never seen an engine fail in flight, but I told myself this is what it must look like, because there was a lot of metal coming out of that tailpipe.

The crew in 510 reported that all cockpit indications were normal and engine response was good. They reduced the port engine to idle, choosing not to secure it until further indications confirmed a fire. After the initial four or five surges of sparks, there was only one more burst of sparks that coincided with the lead's call that he was pulling back the throttle. The engine showed no more signs of failure during the 70-mile RTB and the crew landed with the engine at idle.

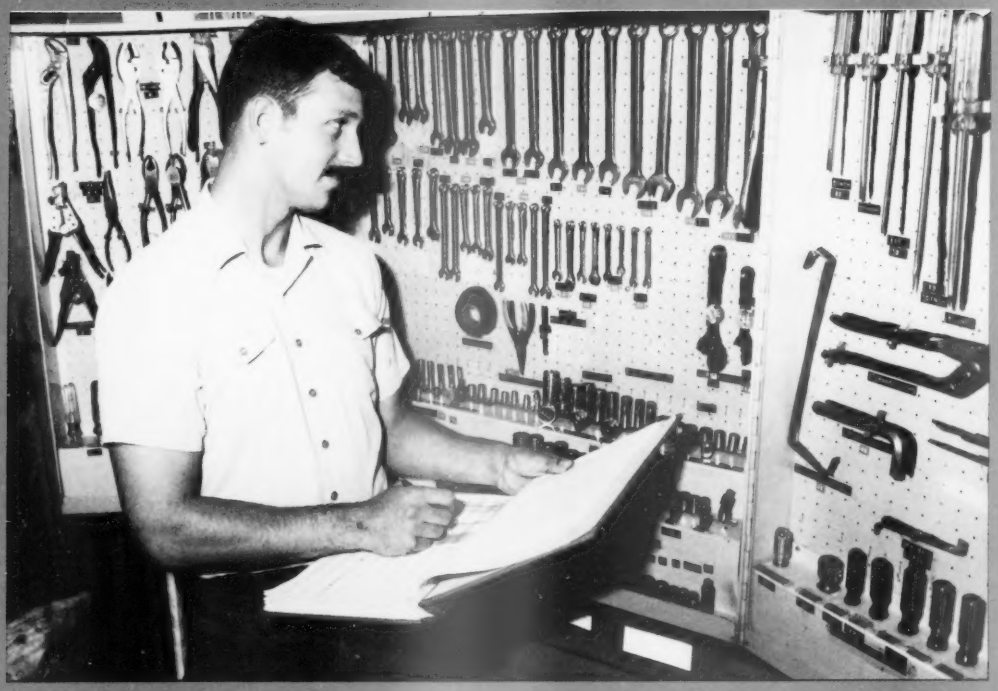
As I walked into Maintenance Control, glad that we had gotten back, the BN in the lead jet said the ordnance personnel found 12 bundles of chaff missing from the buckets, located under the fuselage near the tailhook. My mind ran the gamut of disbelief and embarrassment in two seconds. It's the kind of dumb feeling you might have if you learned you had been spelling the word "the" wrong for the past 30 years.

About two minutes before the mission, our lead's engine troubles started.

Maintenance checked the engine out and of course, found nothing wrong. 510 had a previous gripe stating that chaff dispensed inadvertently when the ALQ-126 was tested. We saw the chaff come out when lead tested the DECM gear during his combat checks. Our position in formation lined up the chaff buckets with the tailpipe to make it appear that the chaff was coming out of the engine. Having never seen another aircraft dispense chaff, close up while wearing NVGs, I had no idea how much the individual pieces of metal would glow. It was very impressive.

Thankful? You bet. I'm thankful the lead didn't do something crazy like eject in that brief instant we told them they were on fire (as NATOPS says!). ◄

Lt. Peterson is BN with VA-52.



The XO's FOD Control Program

By Cdr. Lee Lilly

What struck me in this incident were the high standards to which we hold our maintenance troops accountable…

Soon after I reported to my new squadron as XO, I had to conduct an inquiry on two outstanding petty officers who had violated tool-control procedures. Their actions were in no way malicious and were certainly out of character. Their inventory of a tool box after a job did not reveal a missing tool.

At the inquiry, I issued a stern warning and directed letters of caution. Because of their outstanding performance and the recommendation of the chief's board, we did not hold mast.

What struck me in this incident were the high standards to which we hold our maintenance troops accountable under the tool-control program. Their vigilance has paid big dividends in material and lives saved.

Not long afterward, we found a religious ornament and a set of keys in aircraft on separate occasions. At first, I was annoyed by the lack of aircrew awareness. Then I became upset when I realized that if the offenders had been technicians, they would have quite possibly gone to mast. On further reflection, I knew that I was also guilty, having left an empty soda can in an aircraft.

We had two standards, which doesn't set a healthy command climate. Consequently, our aircrews are getting the same treatment. Each crewman is required to inventory what they have before and after a flight, and if anything is missing, they have to notify maintenance control immediately. The command must act consistently when enforcing FOD policies. ◀

Cdr. Lilly is the CO of VAW-112.

THE PAPER AND INK USED IN THE ORIGINAL PUBLICATION MAY AFFECT THE QUALITY OF THE MICROFORM EDITION.

Your HAC Doesn't Have the Right to Kill You!

By Lt. Matt Callan

"Sir, I have you in a 45-degree right turn. Isn't that a little steep for flying at night?" The instructor pilot (IP) failed to make the proper corrections to wings level. I then realized I would have to take the controls or we would soon go inverted.

We had departed NAS Whiting at 1400 that afternoon on an ONAV 1 and 2 to Jacksonville, Florida. Our TH-57B helicopter was a great VFR aircraft with excellent visibility and range. The syllabus called for one leg of a cross-country to be flown VFR during daylight hours, followed by a second leg after sunset.

After receiving an updated weather brief over the phone, we took off on our second leg on a special VFR clearance out of Tallahassee. An 800-foot ceiling kept us low, but the terrain and distinct geographic features of the countryside made VFR navigation easy.

The IP took the controls and I went to work navigating, using the VFR sectional, VOR, and compass.

As the flight progressed, we talked and I learned that his girlfriend was in Jacksonville waiting for him.

About an hour east of Tallahassee we encountered low patches of clouds and descended to 500 feet. Even with a half-moon, geographic features soon became difficult to and descending through 400 feet. In the training command, we always briefed "inadvertent IFR" but I did not expect to encounter it on this flight. I would have to take the controls or hit the ground.

The IP, in the left seat, could not get a good view of the attitude indicator. On the TH-57B the single vacuum-powered AI is on the right side of the instrument console. It was there mainly for emergencies, although many instructors joked that they would probably trust their senses before they would rely on the AI in a Bravo. Taking control, I executed unusual attitude recovery procedures and started praying. Flying instruments in a Bravo is at best partial panel, and the lack of any type of stabilization or altitude hold doesn't help.

The IP contacted FSS but they were unable to help us find VFR conditions. We could not file an IFR flight plan because the Bravo was not FAA-certified for IMC. Rather than attempting a 180-degree turn and trying to fly back out of the clouds, the IP decided to continue toward Jacksonville.

After about 30 minutes in IMC, we broke out VFR and continued on towards NAS Jacksonville.

I learned more in that two-hour flight than I ever care to learn again. Specifically, fly what you file, and fly what you brief. Don't let "get-home-itis" fool you into doing something stupid. Just because the HAC has a lot more flight time and experience than you, he does not have the right to kill you. ◀

Lt. Callan is an H-60 pilot with HSL-40.

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